

What is claimed:

1. A retractable roof assembly for a motor vehicle having a rear seat and spaced apart roof side frame members defining a roof opening, said retractable roof assembly comprising:

a split rail assembly including a fixed rail adapted to be fixedly secured to each of the roof side frame members and extending along a portion thereof, and a movable rail extending rearward of said fixed rail along a remaining portion of each of the roof side frame members;

a plurality of roof panels extending between the roof side frame members and slidably engaging said split rail assembly for selective movement into a stacked configuration above said movable rail; and

a linkage assembly operably connected to said movable rail for pivoting and articulating said movable rail relative to said fixed rail when said plurality of roof panels is in said stacked configuration in order to stow said plurality of roof panels behind the rear seat of the motor vehicle such that the entire roof opening is exposed.

2. A retractable roof assembly as set forth in claim 1 wherein said plurality of roof panels includes a forward first roof panel, an intermediate second roof panel, and a rearward third roof panel.

3. A retractable roof assembly as set forth in claim 2 including a carrier assembly coupled to said first roof panel and slidably coupled to said split rail assembly for selectively moving said first and second roof panels to a location above said movable rail such that said plurality of panels is in said stacked configuration.

4. A retractable roof assembly as set forth in claim 3 including a coupling mechanism secured to said second roof panel for selectively coupling said first and second roof panels to one another.

5. A retractable roof assembly as set forth in claim 4 including an actuator operably connected to said linkage assembly for actuating pivotal and

articulating movement of said plurality of panels behind the rear seat of the motor vehicle.

6. A retractable roof assembly as set forth in claim 5 including a panel support structure fixedly secured to said movable rail for supporting said plurality of panels in said stacked configuration.

7. A retractable roof assembly as set forth in claim 6 including a package tray assembly having a package tray selectively movable to a folded position for allowing stowage of said plurality of panels behind the rear seat.

8. A retractable roof assembly as set forth in claim 7 wherein said carrier assembly includes spaced apart front and rear guides slidably engaging said split rail assembly for moving said first roof panel back and forth along said split rail assembly.

9. A retractable roof assembly as set forth in claim 8 wherein each of said front and rear guides includes an elongated slot.

10. A retractable roof assembly as set forth in claim 9 wherein said carrier assembly includes spaced apart front and rear legs fixedly secured to said first roof panel and slidably engaging said elongated slots of said respective front and rear guides for selectively raising said first roof panel and allowing rearward movement thereof over a portion of said second roof panel.

11. A retractable roof assembly as set forth in claim 10 including a slide mechanism slidably engaging said movable rail and operably connected to said third roof panel.

12. A retractable roof assembly as set forth in claim 11 including a pivot arm pivotally interconnected between said slide mechanism and said third panel such that sliding movement of said slide mechanism selectively lifts said third panel to receive said first and second panels thereunder to position said plurality of panels in said stacked configuration.

13. A retractable roof assembly as set forth in claim 12 including an air deflector disposed forward of said first roof panel and selectively held down thereby.

14. A retractable roof assembly as set forth in claim 13 including a receptacle disposed behind the rear seat for receiving said plurality of roof panels.

15. A split rail assembly for a motor vehicle having spaced apart roof side frame members defining a roof opening and a plurality of roof panels selectively extending between the roof side frame members to cover the roof opening, said split rail assembly comprising:

a fixed rail adapted to be fixedly secured to each of the roof side frame members and extending along a portion thereof; and

a movable rail extending rearward of said fixed rail along a remaining portion of each of the roof side frame members, said movable rail pivotal relative to said fixed rail for moving the plurality of roof panels away from the roof side frame members to expose the roof opening.

16. A split rail assembly as set forth in claim 15 including a rail locking mechanism coupled to said movable rail for selectively locking said movable rail to said fixed rail.

17. A split rail assembly as set forth in claim 16 including a panel support structure fixedly secured to said movable rail for supporting the plurality of panels during pivotal movement of said movable rail relative to said fixed rail.

18. A split rail assembly as set forth in claim 17 wherein said fixed rail includes a locking tab extending out therefrom.

19. A split rail assembly as set forth in claim 18 wherein said movable rail includes a locator pin for engaging said locking tab to align said fixed and movable rails to one another as said rail locking mechanism locks said movable rail to said fixed rail.

20. A retractable roof for a motor vehicle having a roof opening and a rear seat, said retractable roof comprising:

a plurality of roof panels movable between a closed position covering the roof opening, an intermediate position partially covering the roof opening, and a stowed position behind the rear seat to expose the entire roof opening; and

a linkage assembly operably connected to said plurality of roof panels for pivoting said plurality of roof panels into said stowed position behind the rear seat of the motor vehicle.

21. A retractable roof as set forth in claim 20 including an actuator operably coupled to said linkage assembly for actuating pivotal movement of said plurality of panels into said stowed position.

22. A retractable roof as set forth in claim 21 including a panel support structure for supporting said plurality of panels during movement thereof into said stowed position.

23. A retractable roof as set forth in claim 22 wherein said plurality of panels includes a forward first panel, an intermediate second panel, and a rearward third panel.

24. A method of retracting a roof, having first, second, and third roof panels selectively covering a roof opening, into a space behind a rear seat of a motor vehicle, the method comprising:

- (a) moving the first roof panel vertically relative to the second roof panel;
- (b) sliding the first roof panel over or under the second roof panel to partially open the roof;
- (c) coupling the first roof panel to the second roof panel;
- (d) moving the coupled first and second roof panels under or over the third roof panel; and
- (e) pivoting the first, second, and third roof panels into the space behind the rear seat to expose the entire roof opening.

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25. A method as set forth in claim 24, including enabling the vehicle operator to maintain the first roof panel over or under the second roof panel thereby providing an intermediate position partially covering the roof opening.

26. A method as set forth in claim 25 including lifting or lowering the third roof panel relative to the first and second roof panels prior to the step of moving the coupled first and second roof panels over or under the third roof panel.

27. A method as set forth in claim 25 including lifting or lowering the third roof panel relative to the first and second roof panels to stack the first, second, and third panels subsequent to the step of moving the coupled first and second roof panels over or under the third roof panel.